We claim:

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1. A method for modulating a binary bit stream in a composite video signal, the composite video signal includes luminance, chrominance and audio components, the method comprising:

obtaining sync pulse information from the composite video signal; modulating the binary bit stream according to a modified OFDM technique, the modulating comprising:

generating in-phase and quadrature symbol frames from the binary bit stream; and combining the in-phase and quadrature symbol frames streams according to OFDM modulation techniques; converting the combined symbol frames into an analog signal; and

combining the analog signal with the composite video signal according to the obtained sync pulse information.

2. The method of Claim 1, wherein combining comprises:

translating the analog signal to be centered at an intermediate frequency above the baseband of the composite video signal; and amplifying the translated analog signal.

- 3. The method of Claim 2, wherein the intermediate frequency is at least 2 MHz.
- 4. The method of Claim 2, wherein the intermediate frequency is less than 3 MHz.
- 5. The method of Claim 1, wherein modulating further comprises: encoding the binary bit stream with forward error correction code; and precoding the generated in-phase and quadrature symbol streams according to comb filtering effects.
 - 6. The method of Claim 5, wherein precoding comprises:

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the assembly of in-phase and quadrature symbol frames according to OFDM modulation techniues.

- 7. The method of Claim 1, wherein the composite video signal is a NTSC video signal.
- 8. An apparatus for modulating a binary bit stream in a composite video signal, the composite video signal includes luminance, chrominance and audio components, the apparatus comprising:
- a sync pulse stripper configured to obtain sync pulse information from the composite video signal;
 - a modulator configured to modulate the binary bit stream according to quadrature amplitude modulation, the modulator comprising:
 - a symbol mapper configured to generate in-phase and quadrature symbol streams; and a symbol stream combiner configure to combine the in-phase and quadrature symbol streams according to quadrature amplitude modulation techniques; a digital to analog converter configured to convert the combined symbol streams into an analog signal; and a combiner configured to combine the analog signal with the composite video signal according to the obtained sync pulse information.
 - 9. The apparatus of Claim 8, wherein the combiner comprises:
 - a translator configured to translate the analog signal to be centered at an intermediate frequency above the baseband of the composite video signal; and an amplifier configured to amplifying the translated analog signal.
 - 10. The apparatus of Claim 9, wherein the intermediate frequency is at least 2 MHz.
 - 11. The apparatus of Claim 9, wherein the intermediate frequency is less than 3 MHz.
- The apparatus of Claim 8, wherein modulator further comprises:

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a precoder configured to precode the generated in-phase and quadrature symbol streams according to comb filtering effects.

- 13. The apparatus of Claim 12, wherein the precoder comprises:
- 5 a filter configured to filter the generated in-phase and quadrature symbol streams according to Nyquist square root filtering techniques.
 - 14. The apparatus of Claim 8, wherein the composite video signal is a NTSC video signal.
 - 15. A method for demodulating a binary bit stream modulated in a composite video signal as a gated and windowed OFDM offset carrier modulated signal, the composite video signal includes luminance, chrominance and audio components, the method comprising: converting the composite video signal modulated with the carrier centered OFDM modulated signal into a digital signal;
 - splitting the digital signal into synch pulses and a quadrature amplitude modulated data stream:
 - separating the offset OFDM modulated data stream into in-phase and quadrature symbol frames streams according to the synch pulses; and
 - combining the in-phase and quadrature demodulated symbol frames into a single binary data stream.
 - 16. The method of Claim 15, wherein splitting comprises:

suppressing the composite video signal for attaining the offset OFDM modulated data stream;

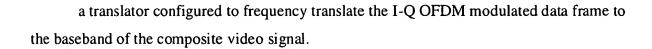
suppressing the offset OFDM modulated data stream for attaining the composite video signal; and

extracting the synch pulses from the attained composite video signal.

30 17. The method of Claim 15, wherein separating comprises:

frequency translating the offset OFDM modulated data frames to the baseband of the composite video signal.

- 18. The method of Claim 15, further comprising:
- 5 decoding the single binary data stream according to forward error correction coding included in the binary data stream.
 - 19. The method of Claim 15, wherein the composite video signal is a NTSC video signal.
- 10 20. A receiver for demodulating a binary bit stream modulated in a composite video signal as an offset OFDM modulated signal, the composite video signal includes luminance, chrominance and audio components, the receiver comprising: an analog to digital converter configured to convert the composite video signal modulated with the offset OFDM modulated signal into a digital signal;
- a splitter configured to split the digital signal into synch pulses and an I-Q OFDM modulated data stream;
 - a separator configured to separate the offset OFDM modulated data frame into in-phase and quadrature symbol frames according to the synch pulses; and
 - a combiner configured to combine the in-phase and quadrature data frames into a single binary data stream.
 - 21. The receiver of Claim 20, wherein the splitter comprises:
 - a first signal suppressor configured to suppress the composite video signal for attaining the I-Q OFDM modulated data stream;
- a second signal suppressor configured to suppress the I-Q OFDM modulated data stream for attaining the composite video signal; and
 - an extractor configured to extract the synch pulses from the attained composite video signal.
- 30 22. The receiver of Claim 20, wherein the separator comprises:



- 23. The receiver of Claim 20, further comprising:
- 5 a decoder configured to decode the single binary data stream according to forward error correction coding included in the binary data stream.
 - 24. The receiver of Claim 20, wherein the composite video signal is a NTSC video signal.